

CLAIMS

Having thus described our invention, what we claim as new and desire to secure by Letters Patent is:

1. A method for identifying slow links in a distributed network comprising a plurality of computers having a plurality of endpoints, said endpoints being connected by a plurality of links comprising the steps of:

defining an original link speed factor for each of said plurality of links;

performing at least one runtime measurement of at least one runtime link speed indicator for each of said plurality of links;

calculating a runtime link speed factor based on said runtime measurement of at least one runtime link speed indicator for each of said plurality of links; and

comparing the original link speed factor to the runtime link speed factor for each of said plurality of links.

2. The method according to Claim 1 further comprising designating as a slow link any link for which the runtime link speed factor satisfies a desired relationship to the original link speed factor.

3. The method according to Claim 2 further comprising notifying at least one of said computers about at least one of the designated slow links.

4. The method according to Claim 2 wherein a plurality of applications are running in said network and further comprising notifying at least one of said applications about at least one of the designated slow links.

5. The method according to Claim 4 further comprising said at least one of said applications altering its usage of said at least one of the designated slow links.

6. The method according to Claim 2 wherein a plurality of applications are running in said network and further comprising automatically altering application usage of the designated slow links.

7. The method according to Claim 2 further comprising identifying designated slow links to a system administrator.

8. The method according to Claim 2 further comprising said system administrator altering application usage of the designated slow links.

9. A method for defining responses to detection of slow links in a distributed network comprising a plurality of computers having a plurality of endpoints, said endpoints being connected by a plurality of links comprising the steps of:

creating a topology map of said distributed network;
displaying said topology map to a system administrator;
providing application information to said system administrator, said information relating to applications to be run on said distributed network; and

said system administrator predefining at least one application response to the detection of slow links in said distributed network.

10. The method according to Claim 9 further comprising storing said at least one predefined application response.

11. A method for dynamically adjusting application usage of links in a distributed network comprising a plurality of computers having a plurality of endpoints, said endpoints being connected by a plurality of links comprising the steps of:

detecting at least one slow link in said distributed network;

for each detected slow link, determining what specific applications requires access to said detected slow link; and

adjusting application usage of said detected slow link by said each of said specific applications.

12. The method according to Claim 11 wherein said adjusting application usage comprises invoking preprogrammed application responses.

13. The method according to Claim 11 wherein said adjusting application usage comprises the steps of:

notifying a system administrator of the detection of at least one slow link; and

said system administrator identifying specific actions to adjust application usage of said at least one slow link.

14. The method according to Claim 11 further comprising the steps of:

a system administrator predefining and storing at least one application response to the detection of slow links in said distributed network; and

retrieving said at least one application response upon detection of said at least one slow link.

15. The method according to Claim 11 wherein said identifying at least one slow link comprises the steps of:

defining an original link speed factor for each of said plurality of links;

performing at least one runtime measurement of at least one runtime link speed indicator for each of said plurality of links;

calculating a runtime link speed factor based on said runtime measurement of at least one runtime link speed indicator for each of said plurality of links;

comparing the original link speed factor to the runtime link speed factor for each of said plurality of links; and

designating as a slow link any link for which the runtime link speed factor satisfies a desired relationship to the original link speed factor.

16. The method according to Claim 11 wherein a plurality of applications are running in said network and further comprising automatically altering application usage of the designated slow links.

17. Apparatus for identifying slow links in a distributed network comprising a plurality of computers having a plurality of endpoints, said endpoints being connected by a plurality of links comprising:

at least one storage location for storing an original link speed factor for each of said plurality of links;

at least one measurement component for performing at least one runtime measurement of at least one runtime link speed indicator for each of said plurality of links;

a processing component for calculating a runtime link speed factor based on said runtime measurement of at least one runtime link speed indicator for each of said plurality of links; and

a comparator component for comparing the original link speed factor to the runtime link speed factor for each of said plurality of links.

18. The apparatus according to Claim 17 wherein said processing component further comprises a component for designating as a slow link any link for which the runtime link speed factor satisfies a desired relationship to the original link speed factor.

19. The apparatus according to Claim 18 further comprising notification means for notifying at least one of said computers about at least one of the designated slow links.

20. The apparatus according to Claim 18 wherein a plurality of applications are running in said network and wherein said apparatus further comprises a component for automatically altering application usage of the designated slow links.

21. The apparatus according to Claim 18 further comprising graphical user interface means for identifying designated slow links to a system administrator.

22. The apparatus according to Claim 21 further comprising user input means for said system administrator to input instructions for altering application usage of the designated slow links.

23. Apparatus for defining responses to detection of slow links in a distributed network comprising a plurality of computers having a plurality of endpoints, said endpoints being connected by a plurality of links comprising:

a mapping component for creating a topology map of said distributed network;

display means for displaying said topology map to a system administrator;

graphical user interface means for providing application information to said system administrator, said information relating to applications to be run on said distributed network; and

user input means for said system administrator to predefine and input at least one application response to the detection of slow links in said distributed network.

24. The apparatus according to Claim 24 further comprising at least one storage location for storing said at least one predefined application response.

25. Apparatus for dynamically adjusting application usage of links in a distributed network comprising a plurality of computers having a plurality of endpoints, said endpoints being connected by a plurality of links comprising:

at least one detection component for detecting at least one slow link in said distributed network; and

a processing component for determining what specific applications requires access to each of said detected slow links; and for adjusting application usage of said detected slow link by said each of said specific applications.

26. The apparatus according to Claim 25 further comprising storage means for storing preprogrammed application responses to detected slow links.

27. The apparatus according to Claim 25 further comprising:
notification means for notifying a system administrator of the detection of at least one slow link; and

user input means for said system administrator to input specific actions to adjust application usage of said at least one slow link.

28. A program storage device readable by machine, tangibly embodying a program of instructions executable by the machine to perform method steps for identifying slow links in a distributed network comprising a plurality of computers having a plurality of endpoints, said endpoints being connected by a plurality of links, said method comprising the steps of:

defining an original link speed factor for each of said plurality of links;

performing at least one runtime measurement of at least one runtime link speed indicator for each of said plurality of links;

calculating a runtime link speed factor based on said runtime measurement of at least one runtime link speed indicator for each of said plurality of links; and

comparing the original link speed factor to the runtime link speed factor for each of said plurality of links.

29. A program storage device readable by machine, tangibly embodying a program of instructions executable by the machine to perform method steps for defining responses to detection of slow links in a distributed network comprising a plurality of computers having a plurality of endpoints, said endpoints being connected by a plurality of links, said method comprising the steps of:

creating a topology map of said distributed network;

displaying said topology map to a system administrator;
providing application information to said system administrator, said information relating to applications to be run on said distributed network; and
said system administrator predefining at least one application response to the detection of slow links in said distributed network.

30. A program storage device readable by machine, tangibly embodying a program of instructions executable by the machine to perform method steps for dynamically adjusting application usage of links in a distributed network comprising a plurality of computers having a plurality of endpoints, said endpoints being connected by a plurality of links, said method comprising the steps of:

detecting at least one slow link in said distributed network;

for each detected slow link, determining what specific applications requires access to said detected slow link; and

adjusting application usage of said detected slow link by said each of said specific applications.